

Document #602 Comment #1 Commentor: Paterson, Lisa

Thank you for accepting my comments on the safe removal of the Atlas tailings. The tailings are leaking ammonia and radioactive waste into the Colorado River now. It has been demonstrated that a large flood could carry a significant amount of radioactive tailings down the Colorado River thus contaminating drinking and irrigation water. Capping the tailing on site will not eliminate this possibility. Therefore, the tailings must be moved.

It is the removal of the tailings that concerns me as a citizen of Moab. To insure the safety and health of all citizens of the Moab Valley and our tourists, the removal of the tailings must be done in such a way as to produce NO DUST. Some sort of negatively pressured building must be erected in which the tailings will be scooped into whatever vessel used to carry them north to the repository. The train cars/trucks or whatever is used to transport the tailings must also be sealed so well that no radioactive tailings are allowed to escape.

It does no good to move the tailings for the safety and benefit of those downriver at the expense of Moab citizens and our tourist economy. Please! remove them without allowing radioactive dust to escape.

Thank you.

Response:

Recognizing that windblown tailings and other contaminated material may create fugitive dust emissions, the EIS states that dust control would be a component of both the on-site and off-site disposal alternatives. A dust control system would be implemented following the provisions of the Fugitive Dust Control Plan for the Moab, Utah, UMTRA Project Site (DOE 2002a), which complies with State of Utah requirements specified in the Utah Administrative Code titled "Emission Standards: Fugitive Emissions and Fugitive Dust" (UAC 2000). Water for compaction and dust control would be drawn from the Colorado River. Dust suppressants such as calcium chloride, which would be stored in tanks, may also be used. Water would be stored in tanks or in the existing water storage ponds and applied only as needed, using the most economical and efficient delivery method.

Possible air quality impacts and human health impacts of transportation under the off-site disposal alternatives are also addressed in the EIS (Chapter 4.0 of the EIS and Appendix H). Transportation of contaminated materials from the Moab site to one of the three off-site locations would result in the exposure of workers and the public to very small amounts of radiation. These exposures would not be expected to result in any latent cancer fatalities to any population.

In the final EIS, DOE has identified off-site disposal at the Crescent Junction site using rail transportation and active ground water remediation as its preferred alternatives for the remediation of the Moab mill tailings, vicinity properties, and contaminated ground water.

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Document #662 Comment #1 Commentor: Roberts, Harold—International Uranium (USA) Corporation

Truck Option

IUSA will not be making any comments on the Trucking Option to the White Mesa Mill. Our initial analysis of the project, and the historical opposition to trucking of the Monticello tailings to the White Mesa Mill, caused us to conclude that this option is not viable for the Moab Tailings. IUSA did not propose the Truck Option and does not support further evaluation of this option at this time.

Response:

DOE agrees that transporting the tailings to the White Mesa Mill site by truck would result in significantly more traffic impacts than transporting the tailings by pipeline.

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Document #662 Comment #2 Commentor: Roberts, Harold

Cultural Resources and Traditional Cultural Properties

Potential impacts to cultural resources for all options are referenced in numerous places in the EIS, with DOE stating that the greatest impacts will be from the White Mesa slurry pipeline option. The EIS indicated that up to 121 eligible sites could be impacted from the White Mesa slurry pipeline option. The majority of these sites are projected to be along the pipeline route. DOE acknowledges that no field surveys were conducted along the proposed pipeline route and that the number of cultural sites is based on an estimated average density of sites in the project area. DOE's proposed route description confirms that the majority of the pipeline route will be within or adjacent to existing pipeline rights-of-way, highway rights-of-way, or through areas previously disturbed by agricultural activity. These areas will have already been cleared of cultural sites or in the case of agricultural land, the cultural sites will most likely have been disturbed by the agricultural activity. In addition, DOE's analysis does not take in to account the flexibility of pipeline construction to avoid cultural sites through adjustments in routing. For these reasons, IUSA believes that the potential impact to cultural resources along the pipeline route is grossly overstated in the EIS. Even though the distance to the White Mesa Mill is further than the other pipeline routes, IUSA believes impacts to cultural resources will be no greater than the other alternatives. DOE must take into account the ability to avoid cultural resources through the flexibility of pipeline routing that is not available for highway and railroad construction.

Response:

Sizable portions of the proposed pipeline routes, both from the Moab site to the White Mesa Mill site and from the Moab site to the Crescent Junction site, are located along existing pipeline and highway rights-of-way. However, the cultural sites that could be adversely affected by DOE's proposed pipelines are located within these rights-of-way; the rights-of-way corridors have not been "cleared of cultural sites." The cultural sites remaining in these rights-of-way were avoided during construction of the existing pipelines and highways. They may not be avoidable if new pipelines were constructed.

Document #662 Comment #2 - response continued

DOE tried to take into account the flexibility of pipeline construction in its cultural resource analysis, as adjustments in routing can be made to avoid cultural sites. For the White Mesa Mill pipeline, an estimated 194 to 404 cultural sites eligible for inclusion in the National Register of Historic Places occur within 0.5 mile of the proposed pipeline. Because of the large uncertainty in the number of sites and uncertainty in the exact location of the pipeline (because of flexibility in construction), DOE assumed that only 25 percent of these sites might be adversely affected. For the Klondike Flats pipeline, a total of 25 eligible sites occur within 0.5 mile of the proposed pipeline. Because of the high certainty in the number of sites but uncertainty in the exact location of the pipeline, DOE assumed that 25 to 80 percent of the sites might be adversely affected. For the Crescent Junction pipeline, a total of 45 eligible sites occur within 0.5 mile of the proposed pipeline. Because of the “medium” uncertainty in the number of sites and uncertainty in the exact location of the pipeline, DOE assumed that 25 to 50 percent of the sites might be adversely affected. DOE believes that this analysis is reasonable. The proposed pipeline route to the White Mesa Mill contains 8 to 16 times more cultural sites than the pipeline route to Klondike Flats and 4 to 8 times more cultural sites than the pipeline route to Crescent Junction. The potential for cultural resource impacts are greater for the White Mesa Mill pipeline than for the other off-site disposal locations.

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Document #662 Comment #3 Commentor: Roberts, Harold

The cultural sites that exist on the White Mesa Mill site have been well documented, and the potential impact to those sites was included in the original Environmental Statement, and subsequent Environmental Assessments, supporting the construction and licensing of the facility. The previous operator of the White Mesa Mill (Energy Fuels Nuclear, Inc.) took great care in preserving and protecting existing sites on the property and altered construction plans when possible to avoid sites.

All of the sites which may be impacted by the construction necessary to accept the Moab tailings were also included in the original site evaluation. Therefore, the DOE should not consider these in the evaluation of the White Mesa site unless they are outside of the already licensed area. The DOE EIS should only consider incremental impacts to the White Mesa Mill site, which will be minimal.

Response:

In accordance with NEPA regulations, DOE is required, and has the responsibility, to describe the nature of impacts associated with its proposed actions. The fact that some of the cultural sites on the White Mesa Mill were documented and assessed in the site’s original environmental impact statement and subsequent environmental assessments does not preclude DOE from analyzing these same sites if they may be affected by DOE’s proposed actions.

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Document #662 Comment #4 Commentor: Roberts, Harold

While it is possible that some existing sites will be disturbed as a part of future construction on the White Mesa Mill site, excavation or mitigation of cultural resource sites is not without recent precedent. The State of Utah provided IUSA a list of authorized archaeological projects in San Juan County. The list includes all known projects since the State began keeping records through to the year 2002. The list includes not only the excavations on White Mesa, but also several listings for highway improvement projects on Highway 191, State Road 95 and Comb Ridge, Recapture Dam pipeline project, City of Blanding 4th Reservoir Project, the DOE's Monticello project, mitigation efforts for Union Oil, several excavations at national parks and recreation areas, reference to several burials, as well as references to excavations conducted by the Edge of the Cedars Museum, and State of Utah agencies and universities.. The recent examples of archaeological excavations in conjunction with other projects should be acknowledged by DOE as a common occurrence in San Juan County and activities at the White Mesa Mill site are not unique in any regard. DOE statements in the EIS lead the reader to conclude that the potential to impact cultural resource sites will make the White Mesa pipeline option impossible to permit.

Response:

The uniqueness of the particular cultural sites that would be adversely affected by DOE's proposed actions can only be determined through the Section 106 consultation process. Given the density and variety of potential traditional cultural properties on the White Mesa Mill site, the importance attached to them by tribal members, and the number of tribal entities that would be involved in consultations, mitigation of these cultural resources would be difficult. DOE does not state that permitting would be impossible.

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Document #662 Comment #5 Commentor: Roberts, Harold

While IUSA is respectful of Native American history and beliefs, the lack of protest by the local Native American community on destruction of cultural sites on other recent projects, including the up-upgrades to Highway 191 through the White Mesa community leads IUSA to believe that the protests regarding the potential impact to cultural sites, as a part of the Moab tailings project, is a reflection of broader objection, by a small segment of the Native American community and its non-Native American supporters, to the operations of the White Mesa Mill. The lack of similar objection on recent projects by the local Native American community should be noted in the EIS and DOE must defend why the impacts to cultural resources are so unique to the White Mesa Mill.

Response:

Cultural resources and traditional cultural properties vary by location. DOE is responsible for analyzing the impacts to cultural resources and traditional cultural properties that would be affected by its proposed actions. The uniqueness of the sites that would be adversely affected by DOE's proposed actions can only be determined through the Section 106 consultation process. The lack of Native American objection to other recent projects (such as highway upgrades through the White Mesa community) is not relevant to this EIS.

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Document #662 Comment #6 Commentor: Roberts, Harold

The State of Utah has historically been in support of the archaeological projects on the White Mesa Mill site. In a letter written to the NRC in the early 1980's, J. Phillip Keene, Executive Director and Utah State Historic Preservation Officer stated that the work on the White Mesa Mill site "undertaken by the State Archaeologist was at the insistence of and with the complete cooperation of Energy Fuels." The letter further states that, with respect to the recovery of archaeological information, "the significance of these sites lies not with their becoming public attractions or monuments, but rather with the information they have yielded about certain prehistoric cultures. Sites of this nature are plentiful throughout the southeastern part of Utah, but have not been tested. It is only the opportunity presented by the desire of Energy Fuels to build a uranium mill in this area that permitted us to devote the time and energy to a thorough study of such sites." Mr. Keene concludes that "there is no doubt in my mind that the proposed project should go forward and that in doing so will recover significant scientific data which could not be recovered if the project didn't proceed."

During this same time period David Madsen (the Utah State Archaeologist) is on record, in a response to a question concerning whether the sites were worth preserving, as stating "that these sites are not unique and that sites of this nature are plentiful throughout southeastern Utah." He supported this by stating that there are 25,000 recorded sites in Utah and 8,000 of these are in San Juan County. "In fact, he added, because of the heavy prehistoric population in this region, it is virtually impossible to find an area that was not similar."

This supporting documentation has previously been provided to DOE by IUSA. IUSA believes that DOE should fairly assess the potential impacts to cultural resources posed by the White Mesa slurry pipeline option, and justify it's conclusion that any such impacts are unique, unacceptable and pose unusual issues for the Native American community.

Response:

See responses to comments #2, #4, and #5.

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Document #662 Comment #7 Commentor: Roberts, Harold

Project Costs

The lack of cost detail provided in the EIS makes it impossible to reasonably evaluate the alternatives. The EIS cost estimate for the slurry pipeline option to White Mesa is more than double the estimated costs provided to the DOE by IUSA for the construction and operation of the slurry pipeline, the slurry preparation plant and the disposal cell at the White Mesa site. Without additional cost information it is difficult to evaluate whether the White Mesa option has been fairly evaluated.

Response:

The EIS presents costs for each alternative using similar labor, schedule, and material cost assumptions to ensure that the absolute and relative costs are comparable. In addition, Section 2.7.3 identifies that the costs include a 10-percent contingency and are expected to fall within the range of –15 percent and +30 percent of the estimates presented. Therefore, the costs as presented (with qualifications) are sufficient to support decision-making and to distinguish among the alternatives.

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Document #662 Comment #8 Commentor: Roberts, Harold

Water Requirements

The EIS estimates that over 400 gallons per minute of makeup water will be required for the slurry pipeline option. This appears to be significantly higher than previous estimates done by IUSA, especially considering that:

- the majority of the existing tailings material is most likely higher in moisture content than the projected optimum moisture for final disposal; and,
- the majority of the water used for slurry transport will be re-cycled back to the Moab site for re-use in the slurry operations.

The EIS is incorrect in the statement that the White Mesa slurry pipeline option will require the same amount of Colorado River water as the other off site pipeline options (see Figure 2–46). In fact, selection of the White Mesa slurry option reduces the demands on the Colorado River relative to the other options. The majority of the water required for the White Mesa option will come from existing sources controlled by IUSA on the Mill site or from IUSA's water rights from Recapture Reservoir. The benefits of reducing the water demands on the Colorado River by selection of the White Mesa slurry pipeline option needs to be clearly stated in the EIS.

Response:

DOE believes that its estimate of make-up water requirements are reasonable and conservative. Section 2.2.4.3 of the EIS states that for the slurry pipeline alternative, 400 gpm of make-up water would be required at the Moab site, either from the Colorado River or, if available, from the off-site disposal location. The section further estimates the availability of this supply at the White Mesa Mill site. This availability is based on the assumption that existing IUC wells and water rights to Recapture Reservoir could supply this make-up water demand. However, Figure 2–46 assumes a worst-case scenario for withdrawals of Colorado River water; for example, if any unforeseen circumstance should disrupt the supply of makeup water from the White Mesa Mill site. In that case, the impact on Colorado River withdrawals would be about the same for all three off-site locations.

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Document #662 Comment #9 Commentor: Roberts, Harold

Furthermore, IUSA believes that the need for large quantities of water for construction of the disposal cells and dust control at the disposal site has not been addressed. The White Mesa Mill has an adequate supply of water for all needs. The source, cost, potential difficulty in obtaining this water, and the cumulative impacts to local water sources have not been addressed for disposal of tailings at the other two off-site locations.

Response:

The estimates for nonpotable water requirements for construction of a reference disposal cell reflect DOE's experience in estimating resource needs for other UMTRCA sites. Table 2-24 in the EIS presents the estimated nonpotable water consumption for the three transportation modes for all three off-site disposal locations. It is assumed that DOE's Colorado River water rights would supply nonpotable water for the Klondike Flats and Crescent Junction off-site disposal alternatives and, if necessary, could do so for the White Mesa Mill off-site disposal alternative.

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Document #662 Comment #10 Commentor: Roberts, Harold

Schedule

The schedule presented for the two other off-site locations appears to be overly aggressive given the need to fully develop the infrastructure at these locations and to complete the necessary studies and permitting efforts to begin construction. DOE needs to justify why the normal permitting process will not be necessary for these sites. If DOE considers these schedules accurate, the licensing requirements for the White Mesa Mill site will be shorter than the greenfield Klondike Flats and Crescent Junction sites because the site is already licensed to dispose of uranium mill tailings.

Response:

The normal permitting process would be necessary for all sites. DOE considers these schedules to be sufficiently accurate and comparable to support decision-making and to distinguish among the alternatives. However, it is not appropriate to assume that because the White Mesa Mill site is already licensed to dispose of uranium mill tailings, the time frame to complete licensing requirements for that site would be shorter than the time frame for the Klondike Flats and Crescent Junction sites. The White Mesa Mill site disposal alternative includes potential issues with the State of Utah regarding amending IUC's license. The assumption of comparable permitting time frames for all alternatives is reasonable.

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Document #662 Comment #11 Commentor: Roberts, Harold

DOE also needs to more fully evaluate the effects on the schedule for the trucking options during the summer months when tourist traffic is at its peak.

Response:

Traffic rates used segmented state data which do characterize the highway sections over an entire year. This information was considered along with the other analyses in the EIS in the identification of rail as the preferred transportation mode for tailings.

Document #662 Comment #12 Commentor: Roberts, Harold

Tailings Conditioning

DOE has acknowledged the need to dry the majority of the tailings material prior to transport to the off-site locations by the truck or train option. The time required to dry the material may be correct for the summer months of the year, but 3 to 7 days seems overly optimistic for the late fall, winter and early spring months. A single thunderstorm could cause a significant reduction in production rates from the site. DOE needs to include contingencies in the project schedule for the truck and rail options for difficulties in getting the tailings material dry enough for transport and placement.

Response:

The time required to dry the material reflects an average period for all seasons and material types (sand and slimes). Though specific climatic conditions may cause short-term variances in schedule, the appropriate stockpiling and management of tailings should ensure that no long-term schedule variances are incurred. Therefore, no schedule contingency has been included for any of the off-site alternatives.

Document #662 Comment #13 Commentor: Roberts, Harold

IUSA is also concerned that the DOE has not properly accounted for the reduction in potential radon emanation for the slurry pipeline option as a result of the elimination of the 50 acres of drying areas at the Moab site, which are not required.

Response:

Section 4.4.15.1 characterizes the radon exposures of the slurry pipeline alternative without the drying beds at Moab.

Document #662 Comment #14 Commentor: Roberts, Harold

Project Benefits

A potential benefit of the White Mesa slurry pipeline option that was mentioned, but only briefly, is the ability of the White Mesa Mill to process the recycle water to recover uranium. At the present time uranium prices have increased to over \$20.00 per pound, which are at levels not seen in over twenty years. The United States currently consumes approximately 60.0 million pounds of uranium annually and produces only 2.0 million pounds. As a result, the country is very reliant on external sources to provide fuel for its commercial nuclear reactors that provide nearly 20% of the country's electrical power. Although it is difficult to accurately determine the potential amount of uranium which could be recovered from the tailings, the ability to pursue this with the White Mesa option needs to be discussed in further detail and should be a potential issue for consideration in the relocation of the pile.

Response:

As noted in the comment, reprocessing of the Moab tailings is technically uncertain, and the potential amount of uranium and other material that would be recoverable is unknown. Therefore, the profit available to IUC is unknown, and the potential to offset some of the costs of this alternative cannot be quantified. Also, such an action at IUC would have to be evaluated explicitly under an EA or EIS and meet the approval of the State of Utah. For these reasons, recovery of uranium from the slurry operation is not explored in this EIS.

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Document #662 Comment #15 Commentor: Roberts, Harold

Page 1–12 DOE has been repeatedly asked during public meetings to include the potential of re-use of the slurry pipeline in the evaluation of the off site alternatives. The EIS mentions the potential long term use of the slurry pipeline system after the completion of the project however it discounts the need to do the study and potential impact of the infrastructure due to the perceived speculative nature of the use of the pipeline system. Preliminary engineering indicates that the contamination concerns raised by DOE are speculative, and that with minimal additional engineering, this perceived issue could be eliminated.

The long-term socioeconomic benefit of the pipeline infrastructure for San Juan County is significant and should not be discounted. The ability to turn short-term expenditure for the relocation of the tailings pile into a long-term economic benefit for one of the most depressed counties in the United States should not be eliminated with little to no analysis. San Juan County is very reliant on the agricultural industry, which over the past several years has been nearly decimated due to the lack of water in the area. The ability to provide another more stable source of water for irrigation, beyond a normal reliance on surface run-off and collection, would result in a significant increase in the number of irrigable acres and overall productivity of the agricultural industry in the area.

Water rights from the San Juan River currently go un-used and could be transferred to the Colorado River because of the common collection point at Lake Powell. Use of these water rights in the areas surrounding the communities of Blanding and White Mesa could dramatically affect the economies and well being of the area residents. DOE should include this potential benefit in the evaluation of the slurry pipeline option to White Mesa.

Response:

As described in Section 1.4.5, it is DOE’s position that the potential post-remediation use of a slurry pipeline to White Mesa for agricultural water use is beyond the scope of this EIS.

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Document #662 Comment #16 Commentor: Roberts, Harold

Page 2–29 DOE should evaluate the pipeline diameter based on an engineering analysis of the construction and operating costs of the pipeline. Selecting the pipe size based on matching an alternative schedule may not yield the most cost effective option.

Response:

If DOE decided to transport the tailings by slurry pipeline, many factors would be considered to determine the pipeline diameter size. For the EIS analysis, assumptions were made regarding the size of the pipe to permit completion of slurry transport on a schedule comparable to that of truck and rail to facilitate comparisons among the alternative transportation modes.

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Document #662 Comment #17 Commentor: Roberts, Harold

Page 2–56 The addition of electrical substation upgrades at the White Mesa Mill site will not be necessary unless the Mill is also processing uranium ore in the conventional Mill circuit.

Response:

The text has been revised to clarify that these upgrades are required for the slurry system only if the mill is also processing uranium ore in the conventional mill circuit.

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Document #662 Comment #18 Commentor: Roberts, Harold

Page 2–62 IUSA’s pipeline consultant did not specify the need for aerial crossings along any of the pipeline route. Exposing the pipeline at any point along the route may be un-advisable due to the issues of vandalism and mechanical damage acknowledged by DOE.

Response:

In independently reviewing the route to the White Mesa Mill site, DOE determined that some canyons and washes may be most affordably crossed via elevated pipeline rather than incurring the extra distances required to go around such terrain. This assumption was used to bound the EIS analyses. If off-site disposal were selected, final corridor-specific design would not be generated until after a disposal site and transportation mode were selected. DOE agrees that exposing the pipeline could result in vandalism and higher maintenance costs and would take this factor into consideration in final route selection.

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Document #662 Comment #19 Commentor: Roberts, Harold

Page 2–88 Table 2–21 is misleading. DOE should separate the equipment required for construction from that required for operation and present the information in two tables.

Response:

Table 2–21 identifies in separate columns the equipment needs for construction and operations by location and alternative.

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Document #662 Comment #20 Commentor: Roberts, Harold

Page 2–118 The reference to “minor geologic instabilities” on the White Mesa site is misleading. This statement could lead the reader to believe that the final disposal cell could fail when in fact the only issue is the potential for erosion or sloughing of the canyon walls to the west of the site. DOE needs to clarify the basis for this statement or remove it from the text.

Response:

As stated in the EIS, minor geologic hazards are a problem only at the edges of and on the slopes of White Mesa where montmorillonite in the Brushy Basin Member is present (see Section 3.4.1.4). DOE did not state that the existence of minor geologic instabilities could result in disposal cell failure.

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Document #662 Comment #21 Commentor: Roberts, Harold

Under the Air Quality discussion, DOE needs to clarify that the potential for greater emissions on the White Mesa option is for the truck option only.

Response:

Section 4.4.2 has been revised to provide the suggested clarification.

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Document #662 Comment #22 Commentor: Roberts, Harold

Page 2–120 The reference to wetlands on the White Mesa site is misleading. The only areas qualifying as a wetland are the wildlife diversion ponds on the east edge of the property. These areas would not be affected by the Moab project.

Response:

Section 3.4.8 of the EIS and Appendix F3.4 acknowledge that the wetlands at the White Mesa Mill site have not been assessed in detail. Section 4.4.5.2 also acknowledges that potential impacts to wetlands are unknown because a detailed assessment has not been done. The general statement on page 2–120 is relative to the comparison of alternatives.

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Document #662 Comment #23 Commentor: Roberts, Harold

Page 1–122 Figure 2–47 is inaccurate in that it indicates a large area of new disturbance for the disposal cell on the White Mesa site. The original Environmental Statement for the White Mesa Mill evaluated the potential disturbance of all but 30 acres of the area projected to store the Moab tailings. This figure should be revised to indicate only the additional disturbance caused by the Moab tailings.

Response:

The figure represents the total area that would be affected under the White Mesa Mill alternative. Prior assessment in other NEPA documents does not relieve DOE of the responsibility to describe the impacts of its actions.

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Document #662 Comment #24 Commentor: Roberts, Harold

Page 2–125 The visual impacts from the slurry pipeline are overstated. The majority of the pipeline route visible from Highway 191 will be adjacent to or within existing pipeline rights-of-way that have been previously disturbed. The southern part of the pipeline route is either well away from the highway or crosses agricultural land. This text needs to be changed to accurately reflect the minimal visual impact for the White Mesa slurry pipeline option.

Response:

The text on page 2–125 summarizes the visual resource analysis described in detail in Section 4.4.11.3. The summary is correct in that pipeline construction would have more adverse impacts to visual resources than any other action described for the White Mesa Mill alternative, although impacts are mostly negligible overall. The summary is also correct in that moderate contrasts would be created in the landscape by the pipeline scars. Along most of the pipeline, however, these moderate contrasts meet BLM’s Class III visual resource objectives.

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Document #662 Comment #25 Commentor: Roberts, Harold

Page 2–135 In Figure 2–61 the DOE indicates a rate of fatalities from pollution health affects for the White Mesa Slurry pipeline option. This is the only option which indicates the potential risk from pollution health effects and there is no mention or discussion of this risk in the text. The rate should be no different than the rates for other pipeline options.

Response:

The nonradiological pollution fatalities for the bar labeled “White Mesa slurry pipeline” has been revised to denote these as traffic fatalities. The nonradiological pollution fatalities are different for each pipeline option, primarily because the distances over which borrow materials are transported to the disposal site are different for each slurry pipeline option. Nonradiological pollution fatalities are discussed in Appendix H.1.1, and the impacts are presented in Sections 4.1.15.3, 4.2.15.2, 4.3.15.2, and 4.4.15.2.

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Document #663 Comment #1 Commentor: Goddard, Terry—Office of the Attorney General

The Colorado River is a vitally important resource for Arizona, and its long-term health matters enormously to the people of this State. In general, I concur with Governor Schwarzenegger of California, Governor Guinn of Nevada, Governor Richardson of New Mexico and our own Governor Napolitano that the Moab Uranium Mill Tailings pile should be removed from the bank of the Colorado River, rather than stabilized in place, to ensure the protection of human health and the environment of downstream users. I am concerned that despite your Agency's best efforts, if the pile is left in place, natural subsidence of the pile and future flood events may result in future releases of contamination to groundwater and the Colorado River. note that part of the Moab tailings impoundment currently sits in the floodplain of the Colorado River and that during a 100-year flood event, the estimated water level would be three to four feet above the base of the tailings pile. I also share Utah's concern that by leaving the tailings in place, the remediation goal for ammonia discharges to the Colorado will never be achieved. Prolonged, elevated concentrations of ammonia could have a severe adverse impact on the health and safety of the residents of Arizona and Utah living along the Colorado River. It could also cause great harm to aquatic life and their habitat and adjacent wetlands.

Response:

The EIS addresses the impacts associated with natural subsidence of the basin and future floods in Section 4.1.17. In addition, the EIS discusses the uncertainties regarding the on-site disposal alternatives in Section 2.6, including the issues of subsidence and flooding, and identifies the impacts should the Department's assessment prove incorrect. The consequences of the 100-year flood and water levels 3 to 4 feet above the base of the tailings pile are quantified in Section 4.1.3.1. A more detailed discussion can be found in the SOWP (DOE 2003a). The analysis was based on site-specific characterization of the tailings source term and the calibrated flow and transport model under the presumption that the tailings remain a perpetual source of contaminant loading to the ground water system along with additional conservative assumptions. It should be noted that current ground water discharge to the river, which is more than 100 times larger than the predicted long-term discharge, does not create a measurable change in river water quality just a few thousand feet downstream from the site. Therefore, the EIS anticipates that the remediation goal for ammonia discharges to the Colorado River would be achieved. DOE is confident that under either the on-site or the off-site alternative, there would not be severe adverse impacts on the health and safety of the residents of Arizona and Utah living along the river or great harm to aquatic life, their habitat, and adjacent wetlands.

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Document #663 Comment #2 Commentor: Goddard, Terry

I have also examined the three off-site remedial alternatives. While all of these alternatives are superior to the on-site alternative, I find the off-site disposal of the uranium tailings at the White Mesa Mill Site the least desirable. Disposal of the uranium mill tailings at either the Klondike Flats or Crescent Junction is preferable because of their proximity to the Moab site, their proximity to existing rail lines and their proximity to off-site borrow areas that can be used for clean backfill and capping purposes. Further, I am concerned that disposal of the uranium tailings at the potential White Mesa Mill disposal site will result in substantially increased truck traffic, with a concomitant increase in the risk of traffic accidents along the US-191 corridor, and in a disturbance of the cultural and historical resources of the Ute Tribe.

Response:

DOE acknowledges the commentor's support for disposal of the uranium mill tailings at either the Klondike Flats or Crescent Junction site because of their proximity to the Moab site, to existing rail lines, and to off-site borrow areas. Traffic impacts associated with transporting the tailings to the White Mesa Mill site by truck are identified in Section 4.4.16. Impacts on cultural resources and traditional cultural properties associated with construction activities at the White Mesa Mill site are identified in Section 4.4.9.

Document #669 Comment #1 Commentor: Kamala, Laura

The Atlas Mill Tailings must be removed from the banks of the Colorado River and moved to a safe contained area well away from the river.

I have been a resident of Grand County for 28 years. I've seen the Colorado River lapping up against the Atlas uranium mill tailings pile in the high water years of '83 and '84. The best available science says that 12 million tons of radioactive waste will wash downstream if left in place, it is just a matter of time. A National Academy of Science report confirms this as well as the USGS. You are well aware of the scientific facts.

Response:

As characterized in Section 2.1.1.3 under the on-site disposal alternative, DOE would use an engineered barrier wall to further reduce the chance of unlikely migration of the Colorado River into the pile and would place riprap on the sides of the pile to deflect the erosional forces of expected floodwaters. The recent USGS report would be used by DOE to size riprap such that floodwater velocities would not be sufficient to degrade these mitigative measures. The EIS acknowledges that the floodwaters of 1984 rose 4 feet up the side of the pile and, in the conservative analyses in Section 4.1.3.1, determined that post-flood releases would not likely exceed aquatic standards in the river. DOE does not believe that pile failure into the river is likely within the regulatory period of 200 to 1,000 years but does agree that, assuming failure of long-term management and maintenance, such an event is possible. The EIS discusses the consequences of catastrophic failure in Section 4.1.17.

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Document #669 Comment #2 Commentor: Kamala, Laura

I stood with Congressman Matheson last October on the riverbank next to the tailings pile and took water samples that dramatically illustrated the rapid outflow of a toxic brew of chemical waste into the current of the river. After all, 57,000 gallons per day of this toxic plume have been pouring into the river for the past 40 years.

Response:

DOE agrees that leaching of contaminants from the tailings pile has affected ground water that discharges to the Colorado River adjacent to the site and that the river is a drinking water supply for millions of people. For this reason, DOE has already undertaken interim actions at the Moab site that must be done irrespective of the decisions made pursuant to the NEPA process to reduce contaminant migration. These actions include capturing and evaporating some of the most contaminated ground water from the legacy plume that is entering the Colorado River and reducing the contaminant seepage from the pile area that has the potential to migrate into ground water beneath the pile. These interim actions have proven to be very effective in significantly reducing the total mass of contaminants reaching the river.

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Document #669 Comment #3 Commentor: Kamala, Laura

The existence of an alternative in the DEIS that considers capping the tailings pile in place is a blatant disregard of the health and welfare of 26 million downstream water users and demonstrates an utter lack of responsibility for the economic disaster that will occur when the Colorado River washes the tailings downstream. Such a scenario should be included in an analysis of the real costs of capping the pile in place.

Response:

As stated in Section 4.1.17, which identifies the impacts associated with the highly unlikely event of catastrophic disposal cell failure and release into the river, a major tailings release is not anticipated to significantly increase risks to human populations downstream of Lake Powell, and the water quality impacts would be short-term. Given the engineering controls for the on-site disposal alternative and the velocities of the worst-case floodwaters, the likelihood of catastrophic failure and the need for remediation are so remote that detailed quantification of these cost impacts is not included in the scope of the EIS.

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Document #669 Comment #4 Commentor: Kamala, Laura

Residents of Moab are threatened with contamination of their culinary aquifer by the toxic plume emanating from the tailings pile. For many years I watched as high Spring winds sent thick clouds of toxic tailings dust airborne, to settle over the residents of the Moab valley. This community has suffered enough from the long range effects of uranium mining and milling and waste storage.

Response:

DOE would survey and radiologically characterize properties in the Moab area to determine if they contain residual radioactive material. If the residual radioactive material exceeded EPA standards, the properties would be targeted for remediation.

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Document #669 Comment #5 Commentor: Kamala, Laura

The Department of Energy should choose an alternative that removes the mill tailings from the banks of the Colorado River. I vote for the Klondike Bluffs site.

Response:

The commentor's preference for relocating the tailings pile to the Klondike Flats site is noted.

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Document #672 Comment #1 Commentor: Peschong, Jon

Section 102 [42 USC 4332] (C) (ii) requires the responsible government official to provide a detailed statement on any adverse environmental effects which cannot be avoided should the proposal be implemented. With the proposed two alternatives, unavoidable impacts are either those impacts resulting from leaving the waste in place (Alternative 1) or impacts resulting from disposal cell construction activities (all three locations analyzed in Alternative 2). The EIS should consider a third alternative - rail and truck transportation of the waste to an existing, licensed disposal cell. This third alternative would not incur the impacts from leaving the waste in place, nor the impacts from disposal cell construction activities. When this alternative is analyzed in the EIS, the existing, licensed disposal cell should be chosen appropriately distant from Moab so as to bound transportation environmental impacts.

Response:

The White Mesa Mill off-site disposal alternative would involve the disposal of the Moab uranium mill tailings in an existing commercial disposal facility located approximately 85 miles south of Moab, Utah. This alternative is analyzed in detail in the EIS.

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Document #673 Comment #1 Commentor: Clark, Monette

I am a resident of San Juan County, Utah, living in the upper end of the Moab Valley, just across the Grand County line. I am writing to make a comment on the Draft Environmental Impact Statement (EIS) issued by the DOE for the Moab, Utah UMTRA Project Site. I am in favor of moving the uranium tailings pile away from the banks of the Colorado River and relocating the contaminated soil, by rail, to the Crescent Junction site within Grand County.

Response:

Comment noted.

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Document #673 Comment #2 Commentor: Clark, Monette

I believe it is imperative that the tailings be moved off the river bank because it is a big health and safety risk, both for residents of the Moab Valley and for the huge population living downstream of the Colorado River. Several years ago, a study showed that the tailings pile is already contaminating the nearby river water with ammonia that is strong enough to kill the fish. Another recent study has found that contaminants are leaching into the ground water across the river, in the Matheson Wetlands Preserve! This is scary and is bound to get worse the longer the pile remains where it is. It is only a matter of time before the Moab Valley ground water becomes polluted and the people of Moab will have unsafe drinking water coming out of the wells that supply us.

Response:

Regardless of whether, in the Record of Decision, DOE ultimately decided to relocate the tailings pile or cap it in place, DOE is confident that the disposal cell would effectively isolate mill-related contaminants for the 200- to 1,000-year effectiveness period specified in 40 CFR 192. DOE is also confident that surface remediation combined with active ground water remediation and the final disposal cell design and construction would reduce the possibility of short-term and long-term impacts to human health and the environment to levels that would comply with the requirements in 40 CFR 192.

DOE's position is that contamination is not migrating under the river and affecting the Matheson Wetlands Preserve. However, there are responsible opposing views on the fate and transport of site-derived contaminants in ground water. Both views on the question of contaminant migration under the river are based on differing interpretations of technical data. A new section on these opposing views (Section 2.6.4) has been added to the final EIS.

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Document #673 Comment #3 Commentor: Clark, Monette

The tailings pile has been there all my life. I grew up in Moab during the 50s and 60s, when the uranium mill was actively processing uranium. The yellowcake and dust from the tailings pond and mill site was blowing all over the valley when I was a kid. I have been exposed to enough radioactivity already.

Response:

DOE will consider this comment in its final decision-making.

Document #673 Comment #4 Commentor: Clark, Monette

The conclusions in the EIS about the river moving southward and the valley floor subsiding have been challenged by other studies and other scientists. I ask you to consider the following items:

- Grand County and governors and representatives across the region are unanimous in their position that pile should be moved to a safe, contained area within the county.
- The National Academy of Science says that it is a near certainty that the river's course will run over the Moab uranium mill site at some time. A major flood or storm event will cause radioactive waste and other chemicals to wash into the Colorado River. The fact that a 100 or 500 year flood has not occurred in recent history is not a good enough reason to suppose that such an event will not occur in the future. In the scheme of geologic and meteorological history, recent history means nothing. To confine ourselves to the limited purview of recent history is both dangerous and irresponsible. We have the opportunity and responsibility to protect future generations and millions of people in the lower Colorado River Basin.

Response:

The NAS report to the Department, dated June 11, 2002, stated, "While one cannot predict the timing of river migration (over the coming millennia or in the next several decades), the committee sees it as a near certainty that the river's course will run across the Moab site at some time in the future, unless engineered barriers prevent it from doing so." DOE agrees with the NAS conclusion that at some point in the future, especially considering geologic time, the river will cross the Moab site. DOE believes that engineering controls could be used to resolve this issue for the near term (200 to 1,000 years). As part of the analysis for the on-site disposal alternative documented in the EIS, the need for engineered barriers to control river migration is defined.

Section 4.1.3.1 acknowledges the potential for flooding of the tailings pile if the tailings were capped in place and quantifies the impacts that could result from such inundation. These impacts would include additional leaching of contaminants into the ground water and subsequent migration to the river. As stated in Section 2.1.4, an on-site disposal cell would include side slopes armored with riprap of sufficient size to resist erosion from floodwaters. The design would also include a barrier wall between the river and the capped pile to mitigate against river encroachment. These measures would further reduce the already low probability of a catastrophic failure of an on-site disposal cell. USGS data on potential flood velocities that might occur at the pile would be used for the final design of the riprap side slopes and the barrier wall if this alternative were selected.

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Document #673 Comment #5 Commentor: Clark, Monette

Moving the Moab Uranium Tailings Pile is a justice owed to the Moab community. The government started the Uranium Boom and created the market for it. Moab people, including my relatives, produced the radioactive material for America's defense. And everybody in America benefited by being "protected." Many of the mill workers are now dead of cancer. Fifty-plus years later, the government should be responsible enough to defend the local people that are left (and all the new people moving in here due to our new tourist economy) against the very real terror of radioactive pollutants on the riverbank! The cost of moving the pile should be shared by the nation that shared in the "benefits" of nuclear defense. Please move the tailings pile NOW.

Response:

Comment noted.

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Document #684 Comment #1 Commentor: Weber, Ivan

Of those raised to date, the single one of greatest concern amounts to a strenuous objection to leaving in place and capping of the tailings. The reasons that I will cite for this objection, and for the corollary favor for tailings pile relocation, are these:

- River undercutting: River morphology will undermine the site, repeatedly and emphatically, not only through extreme high water event dynamics, but also through the more frequent annual high water scouring. It is extremely important to register objection to the DOE hydrological model for river cutting, which apparently failed to incorporate suspended sediment effects. With increased velocity that occurs in high water events, suspended particle size also increases. One would see that very large rocks are among suspended sediments being tumbled and swirled along the bottom/outside of a river bend, such as that occupied by the Atlas Tailings. The DEIS's arguments that the river will cut downward in the channel's center defy common sense, not to mention the accumulated body of knowledge on river morphology. Study of channel migration mechanics need stray no more than a few miles from the Atlas site to find many examples to belie the DEIS model, and show that the site is in a great deal more jeopardy than DOE postulates.

Response:

The EIS acknowledges the potential for flooding of the tailings pile if the tailings were capped in place and quantifies the impacts that could result from such inundation. These impacts include additional leaching of contaminants into the ground water and subsequent migration to the river. As stated in Section 2.1.4, an on-site disposal cell would include side slopes armored with riprap of sufficient size to resist erosion from floodwaters. The design would also include a barrier wall between the river and the capped pile to mitigate against river encroachment. These measures would further reduce the already low probability of a catastrophic failure of an on-site disposal cell.

DOE has reviewed the recent Colorado Streamflow Simulation Report issued by the USGS. The USGS report states that under a PMF scenario, not the 100-year flood scenario, the river level would be 25 feet above the toe of the tailings pile. Under the 100-year flood scenario, the river level would be approximately 4 feet above the toe of the pile, as occurred during the 1984 flood. During this flood, the unprotected pile was not breached because velocities decrease when the river flows over its banks. The USGS report also confirms the conclusion in the DOE river migration report that under 100-year and higher flood conditions, the river velocities adjacent to the tailings pile would be well within the range that could be mitigated with conventional engineering approaches. If the on-site disposal alternative were selected, data in the USGS report would be valuable in designing the engineered barriers to river migration described in the EIS and recommended by the NAS. There are, however, responsible opposing views on this issue; these views are discussed further in Section 2.6.4 of the EIS.

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Document #684 Comment #2 Commentor: Weber, Ivan

- Capping won't prevent Colorado River centrifugal undercutting: Surficial "capping" or "armoring" of the pile will do little to prevent undercutting and collapse of the pile. As the pile rests on gravels and alluvial sediments of previous river-course migrations --- in other words, the river has been there, in the past --- there is no valid basis for assuming that the river channel cannot go through the site again. Given the potential for significant precipitation pattern changes due to regional global climate change impacts (as projected in Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change - Rocky Mountain/Great Basin, Feb 2003, Dr. Fred Wagner et.al., Utah State U.), the possibility that the historical range of variability of flows may be exceeded does exist. This introduces the possibility that our certainty about Colorado River behavior and dynamics may be reduced greatly. DOE may find itself armoring the site repeatedly, as has been the experience of many other river channeling projects (e.g., Mississippi and Missouri), or of harbor protection projects worldwide. This future risk must be factored into the calculus of this decision, especially the likelihood that the estimated lower costs of capping in place have been assigned erroneously. Initial costs may be lower, perhaps; but long-term costs, perhaps even in a timeframe of only a few decades, may be multiples of the initial cost.

Response:

See response to comment #1 regarding river migration and flooding. With regard to long-term management costs, DOE has included management costs in perpetuity but will consider the potential for additional costs under the on-site alternative in its final decision-making.

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Document #684 Comment #3 Commentor: Weber, Ivan

- Site structural instability: The subsurface fault trending NW-SE through the tailings site cannot be predicted to be stable, and may provide to the river a point of weakness to induce more northwestward cutting than could be supposed if the site consisted of homogenous strata. It is through rock structural weaknesses such as these that this great river manages to cut through great ramparts to seek the most hydrologically direct route to the sea. In terms of the Colorado River's history, to follow the path of least resistance enough to completely remove the Atlas Tailings site is a relatively small matter. It is not a geotechnically "strong" site.

Response:

A systematic evaluation of geologic processes that could affect the site is detailed in Section 4.1.1 of the EIS.

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Document #684 Comment #4 Commentor: Weber, Ivan

- Biogeochemistry neglected, Source control not accomplished by capping-in-place: Leaving tailings in place does not accomplish contamination source control. The DEIS is inadequate in its consideration of the processes by which ammonia and other “contaminants of concern” are leached from the tailings pile. Capping with relatively impermeable materials (clay from decomposed shale) and subsequent armoring may retard percolation of the meager precipitation that falls on the cap, but it will not stop capillary flow from below, or upflow induced by the area’s hydrological gradient and zones of rock weakness, such as the fault. Moreover, bacterial action, which is surely involved in ammonia formation, may not be retarded by capping if key microbiological communities will thrive on anaerobic conditions. This is often the case in tailings and waste rock piles, in which even some oxidizing bacteria require little or no air to perpetuate their effects.

Response:

Section 3.1.3 of the EIS presents characterization data for the tailings pile. In that section, mean tailings pore water concentrations for uranium, radium, and ammonia are presented based on site-specific characterization data. The flux from the tailing pile has been conservatively assumed to be equal to the existing average pore water concentrations without any additional degradation or geochemical transformations. There is no mechanism for capillary flow from below, or for ambient upflow induced by the area’s hydrological gradient and zones of rock (such as the fault), to leach contaminants from the tailings pile. Under aerobic conditions (such as are currently observed in the pile), bacteriological activity is typically involved in degradation of ammonia to nitrate, which would tend to decrease the ammonia concentration in the pile and ground water. Under anaerobic conditions, bacteriological activity is typically involved in reducing nitrogen gas and would not affect the ammonia concentration in the pile or in ground water. Therefore, the characterization and evaluation of the processes by which ammonia and other contaminants of concern are leached from the tailings pile is considered conservative and appropriate.

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Document #684 Comment #5 Commentor: Weber, Ivan

- Tailings contamination behavior if swept into the Colorado: Recent newspaper commentary suggesting that the contamination produced by the tailings would be diluted and homogenized into Colorado River waters and sediments, then sequestered in Lake Powell, are simplistic and probably wrong. Rivers only homogenize some materials, usually those of similar density and other physical characteristics. Materials of greater density get sorted and classified by rivers, accounting for placer deposits of gold, silver, tin, and other metals. Again, risk is involved in the objectionably negligent attitude that it's OK to let the river take away the tailings and 'naturally attenuate' the contamination. This would be a very bad decision, based on extremely reprehensible ethics and miserably deficient science.

Response:

NEPA requires DOE to evaluate very unlikely future scenarios that have a low probability of occurrence, but potentially significant consequences. These types of scenarios also have considerable uncertainty that cannot be overcome with additional calculations or science. In short, this type of estimation (predicting consequences from a future, unlikely catastrophic event) will never be accurate. Spending considerable resources to better evaluate this one area of uncertainty would not improve the overall accuracy of the final estimates because of the significant uncertainties associated with basic assumptions needed to evaluate this scenario (e.g., characteristics of the assumed future flood). Therefore, DOE believes that the evaluation presented in the EIS provides a reasonable analysis of this scenario.

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Document #684 Comment #6 Commentor: Weber, Ivan

- Human health impacts: Radon may undergo repeated episodes of release if and when the cap is compromised by collapse or cutting, due to outward river migration under the site. These episodes could be quite significant, depending on weather conditions, endangering human health to a far greater degree than projected for the relatively steady-state modeled in the DEIS.

Response:

In Section 4.1.17 of the EIS, DOE acknowledges the uncertainties associated with catastrophic failure, including river migration. However, DOE has determined that compliance with the 40 CFR 192 standards concerning protection of human health can be accomplished with existing technology and engineering controls. Section 2.6.4 has been added to the EIS to discuss responsible opposing views, including those on river migration.

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Document #684 Comment #7 Commentor: Weber, Ivan

- Wetlands impacts: The Matheson Wetlands Preserve may well be receiving contaminated flows passing under the river and emerging downgradient in the wetlands. This observation points out the complexity of hydrology in the area, and the urgent need to remove the source in order to remediate ground water contamination. Without source removal, this ongoing threat to wetlands and wildlife cannot be mitigated or halted. Selenium, particularly, appears not to have been accounted for its potential teratogenic effects on birds, fish and amphibians --- particularly on birds in the Matheson Wetlands Preserve. The maximum selenium concentration reported in Appendix A2, 0.026 mg/L (26 ppb) is well beyond the appropriate limits for wildlife reproductive integrity, according to a growing body of literature on selenium aquatic biology (Lemly and others). The possibility, moreover, of synergistic effects exists. Literature cites, for example, selenium-vanadium interactive effects on wildlife, which cannot be ruled out as a condition created by continued presence of the Atlas Tailings on this site, and failure adequately to remediate ground water beneath the site, including extended effects into the deeper aquifer.

Response:

DOE does not believe that contaminants from the tailings pile are traveling under the Colorado River and emerging downgradient in the wetlands. The selenium concentrations in the Matheson Wetlands Preserve are naturally occurring and not related to the site. Similarly, dissolved ammonia has been identified in ground water on the east side of the Colorado River, and it is probable that its presence there is also solely the result of natural phenomena. Ammonia levels in wells screened within uncontaminated brine near the river are typically in the 3- to 4.5-mg/L range, which is the same range observed in ground water on the river's east side. In addition, oil and gas wells drilled into the Paradox Formation in the vicinity of the Moab Valley have encountered brine with ammonia concentrations as high as 1,330 mg/L. These observations, combined with multiple lines of evidence indicating that the river and lowlands lying directly east of it act as a discharge location for regional ground water (including brine from dissolution of the Paradox Formation), suggest that dissolved ammonia in ground water east of the river is naturally caused. In addition to text in the SOWP (DOE 2003a), Figure 5 of Gardner and Solomon (2003) indicates that the Colorado River and its eastern overbank area act as discharge locations for Paradox-derived brine. Further discussion of these opposing views is included in Section 2.6.4 of the EIS.

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Document #684 Comment #8 Commentor: Weber, Ivan

- Relocation is the only option: As a consequence of recognition of all these risks, moving the tailings is imperative. Other risks, such as from dust and radon during the relocation, can be reduced acceptably (indeed, must be controlled) by 'engineering controls.'

Response:

DOE will consider this comment along with the impacts identified in the comment in its final decision-making.

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Document #684 Comment #9 Commentor: Weber, Ivan

- Transport options: Practical considerations elucidated in the DEIS warrant respect, it goes without saying. As one involved in relocation of significantly greater quantities of various types of tailings, sludges and waste rock on Kennecott Utah Copper's unprecedented cleanup projects in the 1990s, I can only encourage the choice of least energy-consumptive option. Intuitively, rail is preferable if systems of excavation/loading and unloading/placement can be devised. The option that is obviously not adequately considered, that we believe may be critical to the feasibility of rail transport, is conveyor use at each end. It is a proven technology, utilized over longer distances than will be encountered at either Klondike or Crescent disposal sites, with ample flexibility to minimize multiple handling events and dust. Pressure slurry may be acceptable as an alternative transport means, but adequate treatment of slurry waters must be taken into account before discharge, under some conditions. Truck transport involves less chance of multiple handling, and greater flexibility of placement, but also involves much greater energy consumption than a rail/conveyor system. Truck activity at the tailings loading site may also present the greatest risk of uncontrollable dust, as well as of diesel emissions, which could contribute to already marginal air quality conditions in Moab during temperature inversions.

Response:

DOE agrees with the commentor's assessment of transportation options. For these reasons and others, transportation by rail has been identified as the preferred transportation mode. The specific technology to be applied to loading and offloading of the materials at each end of the operation has not yet been determined; this level of design is not required to support informed decision-making in identifying the preferred alternative. Conveyor systems for this application may well be appropriate.

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Document #684 Comment #10 Commentor: Weber, Ivan

- Disposal site options: Klondike Flats seems the preferred option, with White Mesa Mill absolutely ruled out.

Response:

For the reasons discussed in Section 1.4.5, DOE has identified transportation of the tailings to Crescent Junction by rail as its preferred surface remediation alternative.

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Document #684 Comment #11 Commentor: Weber, Ivan

White Mesa Mill has one of the worst records of contaminated materials handling we have ever encountered. In the course of recent review of process cell construction, we have learned of the woeful inadequacy of cell design, liner specification, subgrade preparation, drainage and monitoring system design and installation, and of liner installation, but particularly of liner covering with ‘protective’ soil materials. Instead of sand for bedding and covering liners, the cells are shown in QA/QC report photos to have been covered with soils characterized by large, angular rocks that almost certainly caused perforations in liners even before construction was completed. There is no reason, based on IUC’s record, to suppose that they are capable of doing any better with future lined basins, even with the assumption of regulatory authority by a more attentive staff at UDRC. IUC has not earned the public’s trust. Beyond this fact, the construction of a long pressure-slurry pipeline is fraught with construction and operational risk, and presents the inevitability of disposal of contaminated water, contaminated by the slurry event, itself. This ‘choice’ is no choice; White Mesa must be rejected *prima facie*.

Response:

IUC’s past operations at the White Mesa Mill were the responsibility of the NRC; the mill’s operations are now the responsibility of the State of Utah. If, in its final decision-making, DOE decided to implement an alternative other than the preferred alternative of off-site disposal at Crescent Junction, the commentor’s assertions would be explored further. The safety systems of a slurry pipeline that would prevent a significant release from a pipeline failure are discussed in Section 2.2.4.3.

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Document #684 Comment #12 Commentor: Weber, Ivan

Given our preference for rail/conveyor transport, Klondike Flats is the most appealing. Compared to the Crescent Junction site, there may also be factors of visual impacts and possible health exposures that should be considered. Either site is, by such a great margin, preferable to all the other alternatives that we find no objection to either.

Response:

See response to comment #10.

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Document #684 Comment #13 Commentor: Weber, Ivan

- Costs: The costs estimated by DOE, as well as by NRC and Price Waterhouse Coopers before DOE assumed responsibility for the site, appear beyond reason. We appreciate the need to be conservative in the direction of assuring adequate funds to do the job well, but we find no other cleanup in recent years to approach the per-unit relocation costs outlined. If any part of the project seems likely to exceed projected costs, we submit that it may be ground water remediation. Given the apparent inadequacy of DEIS analysis of sub-site geology and hydrology, there may be surprises in store.

Response:

Remediation costs represent DOE's best estimate of probable costs. DOE acknowledges that there are uncertainties (Section 2.6.3) and responsible opposing views (Section 2.6.4) that cannot be resolved to everyone's satisfaction, and that these issues have the potential to affect remediation costs.

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Document #684 Comment #14 Commentor: Weber, Ivan

Conclusions: The "bottom line" conclusions of our following of the issue, and our review of the DEIS document, supplemented by some modest investigation into subsurface geology and hydrology, as well as comparative visual survey of river morphology at others of the many curves in the region, are that 1) the tailings simply must be moved, and 2) they must be moved either to Klondike Flats or Crescent Junction, if another more suitable site is not identified between now and the time DOE commences these activities. There is no real choice. "No action," "cap in place" and "relocate to White Mesa Mill" are not responsible options, by any stretch of imagination, or applied engineering/environmental science. This is such a patently obvious case of governmental failure to hold a responsible corporation responsible that we can only hope and pray that DOE is able to pursue recourse for financial recovery from Atlas of some of these costs. As we say in the vernacular, "This just ain't right!" Emphatically, neither is it "right" to leave the tailings in place!

Response:

DOE will consider the commentor's opinion on the preferred alternative in its final decision-making. There would be no opportunity for cost recovery from Atlas; taxpayers would be responsible for the costs of final remediation.

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